

FIG. 1

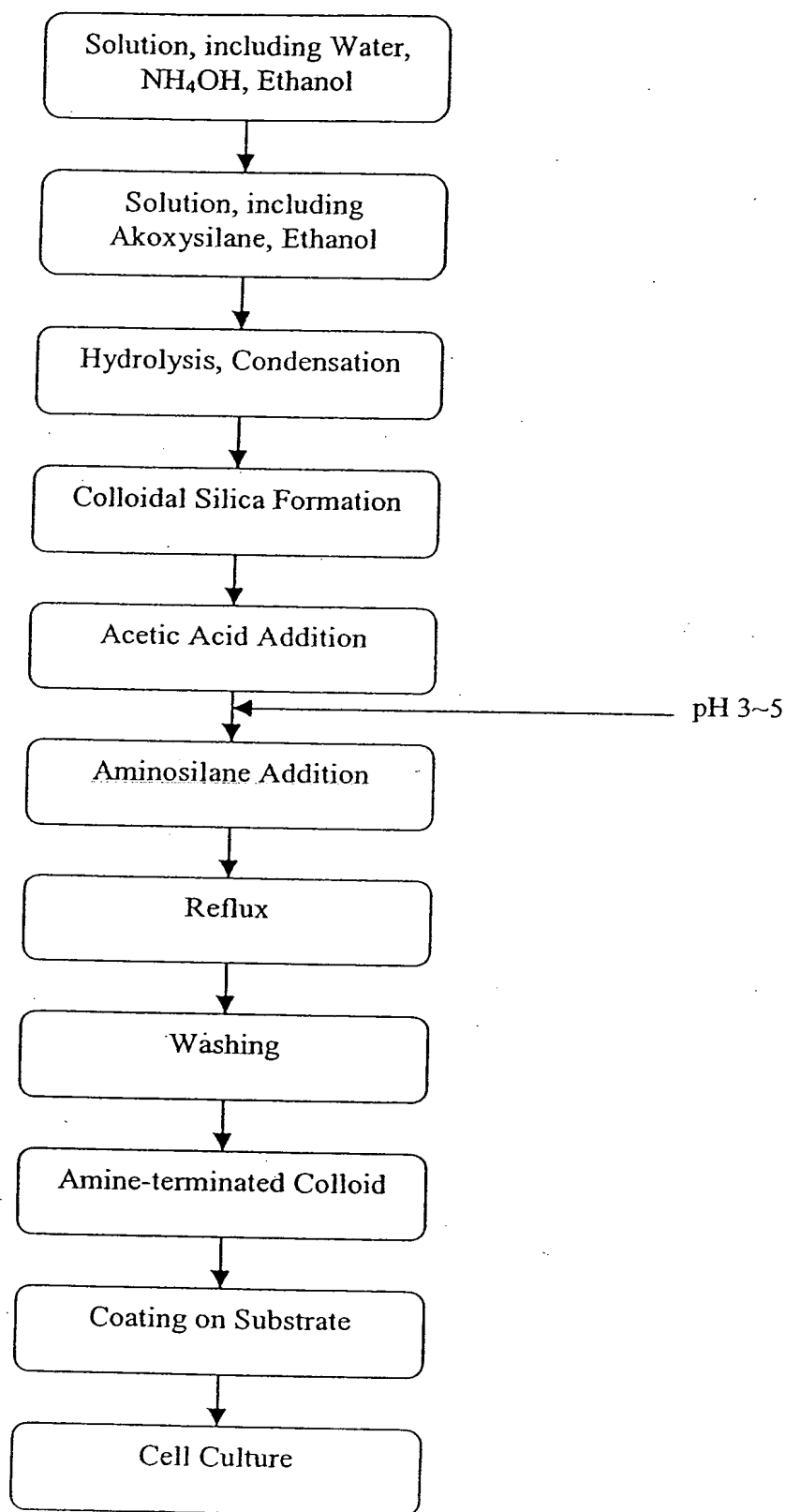
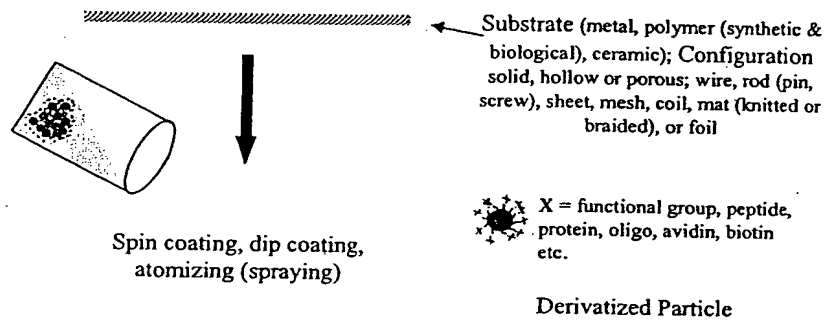
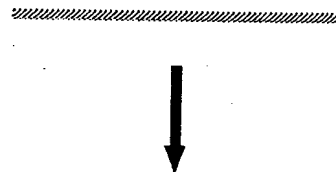


FIG. 2

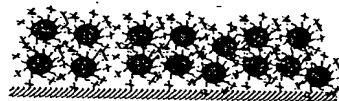
Step I



Step II

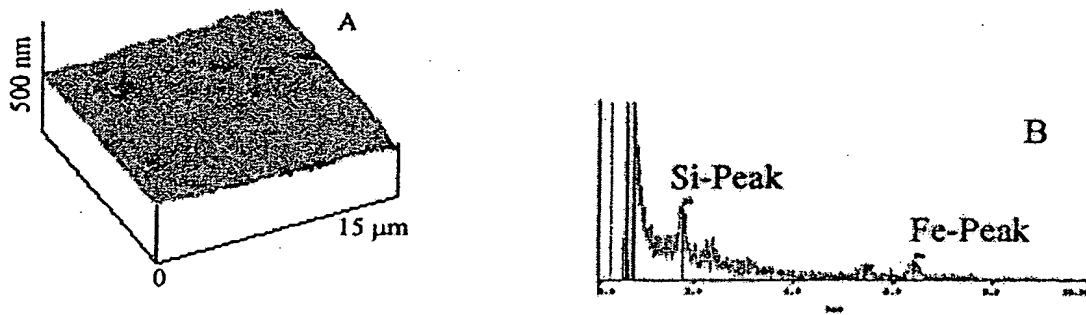


Step III



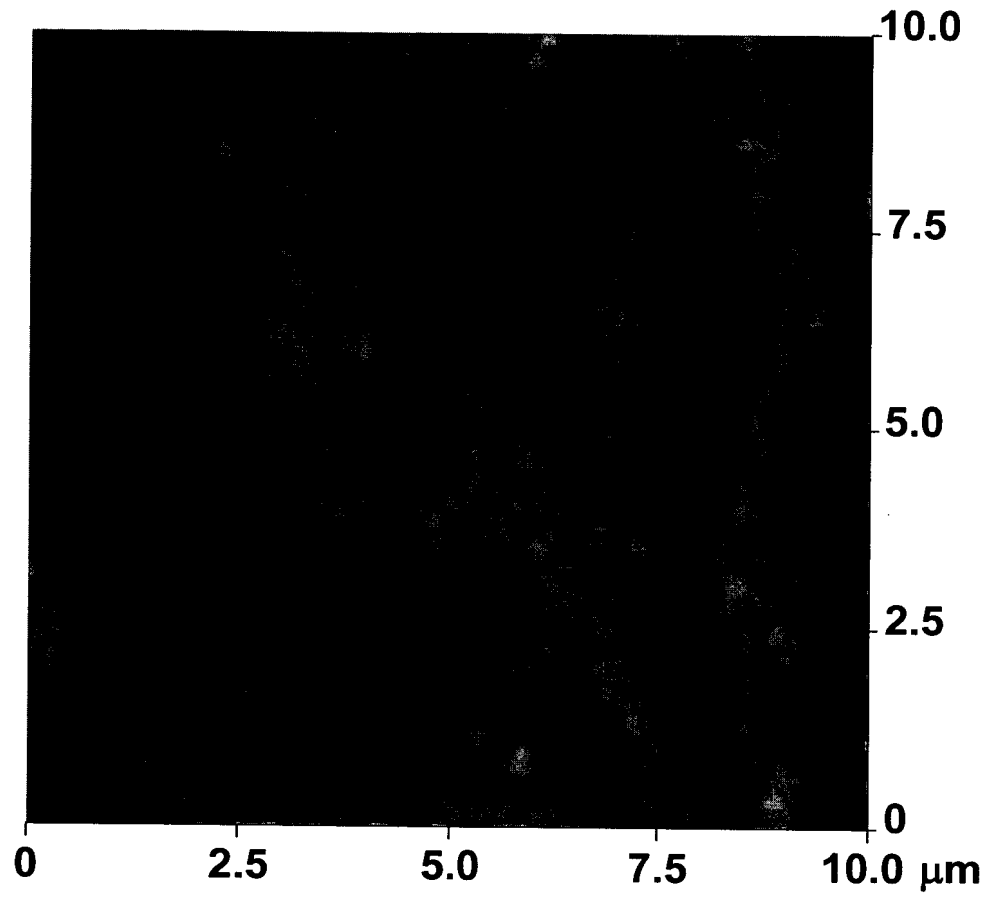
Step IV: Repeat I - III with the same or different particle

FIG. 3



Type 316-L stainless steel surface modified with silica nano particles (A) AFM image showing the presence of stacks of nano particles and (B) EDAX spectrum of the surface confirming the presence of Silica.

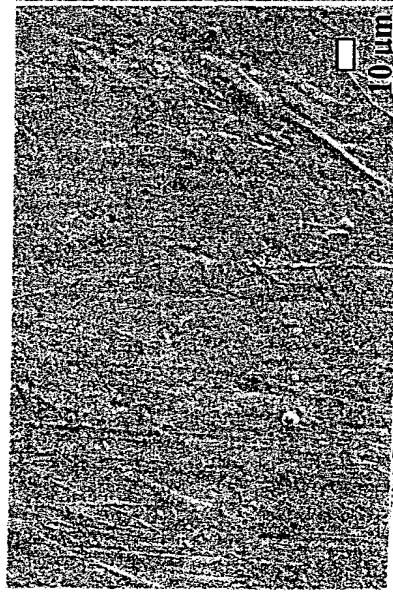
FIG. 4



# Stainless Steel

FIG. 5

A



Unmodified

B



SiO<sub>2</sub> NP Modified

C



SiO<sub>2</sub>-NH<sub>2</sub> NP Modified

# Titanium

D



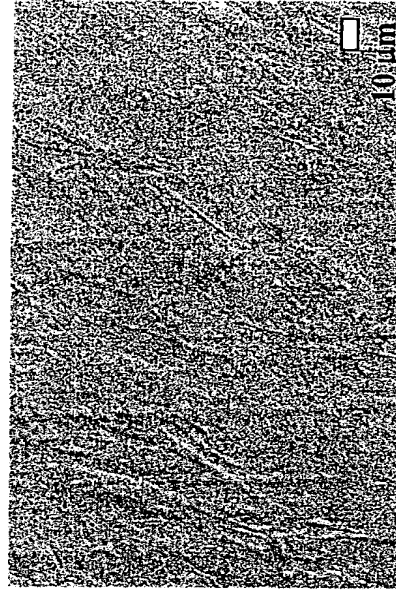
Unmodified

E



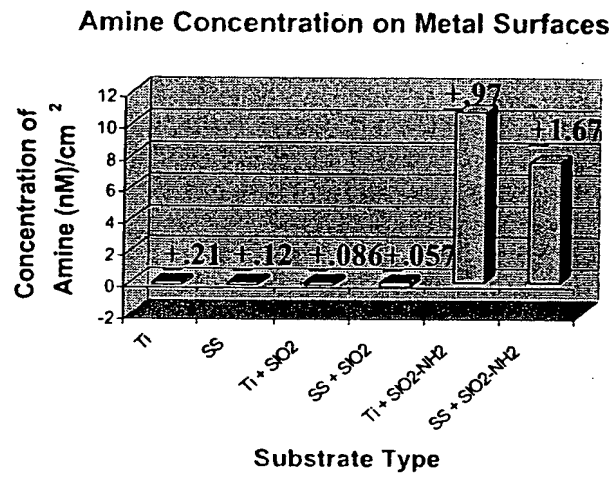
SiO<sub>2</sub> NP Modified

F



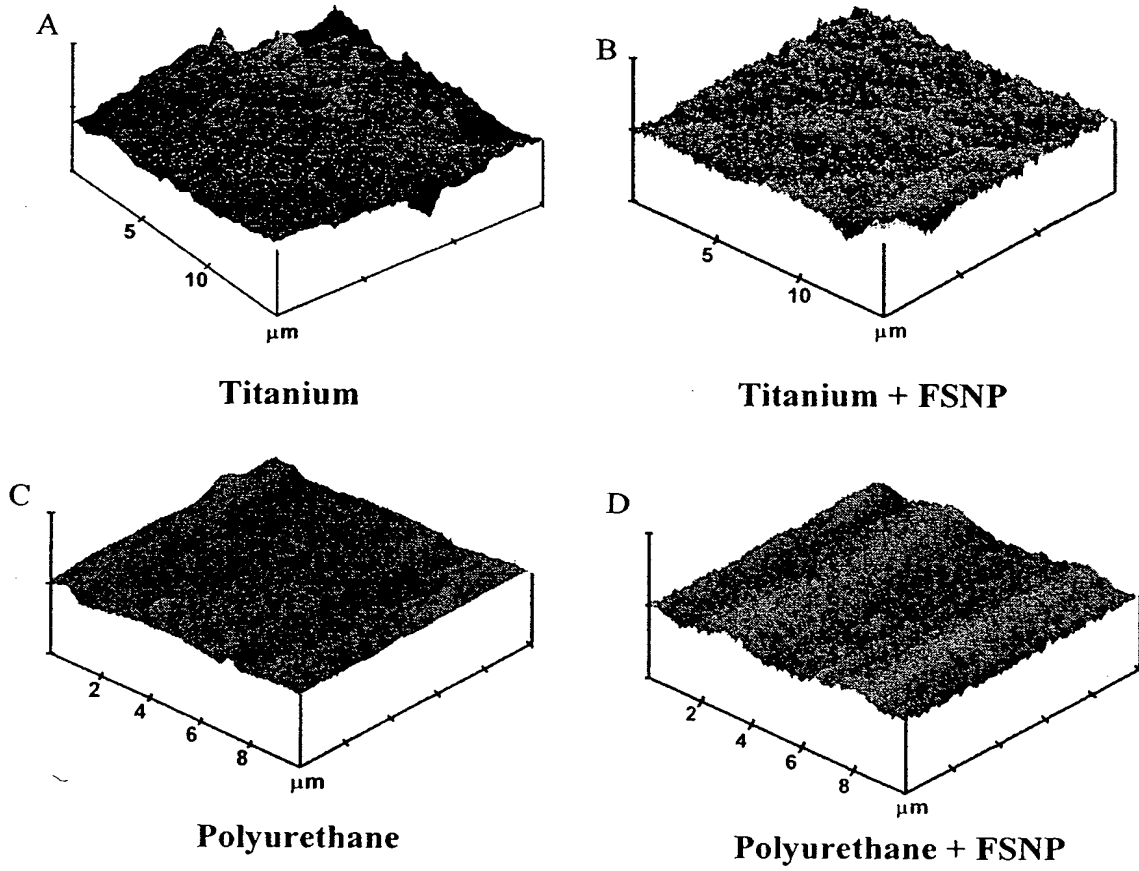
SiO<sub>2</sub>-NH<sub>2</sub> NP Modified

FIG. 6 Functional Group Quantification on Modified Metal Surfaces



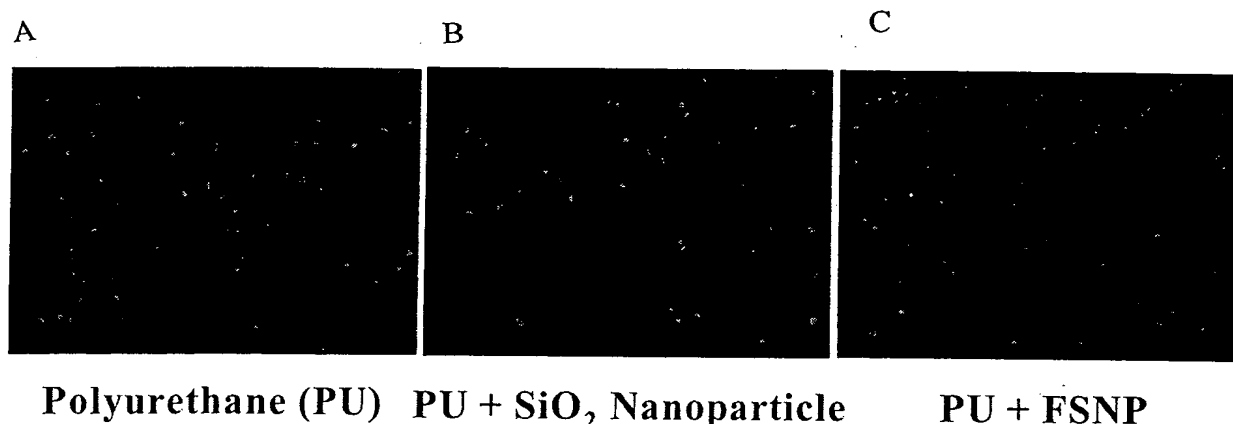
**FIG. 7**

Atomic Force Microscope Images of Metal and Polymer Surfaces Modified Using Functionalized Silica Nano-particles (FSNP)



**FIG. 8**

Fluorescent Images of DAPI (nuclear stain) Stained MC3T3-E1 cells on Polyurethane (PU) Surfaces



**FIG. 9** Characterization of FSNP Modified Surface Using Scanning Electron Microscopy. (Non-limiting example)

